

REMARKS

In response to the Office Action mailed December 4, 2003, Applicants propose to amend their application and request reconsideration in view of the proposed amendment and the following remarks. In this Amendment it is proposed to cancel claims 2-4 , 6-8, and 25 and to add claims 26-28 so that claims 1, 5, 9-24, 26-28 will be pending upon entry of the foregoing Amendment.

THIS AMENDMENT

In the foregoing Amendment, claims 1, 2, 3, and 8 are combined as amended claim 1. Claims 2, 3, and 8 are cancelled as redundant in view of the combination of claims. Because of the nature of claims 1, 2, 3, and 8, serial arrangement of their respective limitations does not produce a logical claim structure. Therefore, the respective claim limitations have been combined to produce a logical claim structure without the introduction of new issues. The amended claim 1 is clearly supported by several embodiments illustrated in the patent application, for example by the embodiments of Figures 8-11, 13, 14, and 17 of the patent application.

Claim 10 has also been rewritten as an independent claim by combining most of the limitations of examined claims 1, 4, and 10. Claim 10 encompasses numerous embodiments of the invention illustrated and described in the patent application, for example, the embodiments of Figures 6, 7, 12, 19, 22, 25, and 27-33.

As to the new claims, claim 26 is supported by the embodiment of Figure 7, claim 27 is supported by the embodiments of Figures 12, 19, 22, 25, and 27-33, and claim 28 is supported by the embodiment of Figure 12.

DOUBLE PATENTING REJECTION

Examined claims 1-3 and 6-9 were rejected for obviousness type double patenting over U.S. Patent 6,414,749. Upon entry of the foregoing Amendment, this rejection is potentially applicable only to independent claim 1. A Terminal Disclaimer will be filed upon an indication of allowability of amended claim 1.

CLAIM OBJECTIONS

Claims 21 and 23 were rejected as including informalities. Claim 21 is corrected. As pointed out by the Examiner, an error was made in describing a surface as convex, when the surface is more accurately described as concave. The light refraction from the internal concave

surface rather than from the external convex surface. There was no error with respect to claim 23, which has been clarified, in the foregoing Amendment. Attention is directed to Figures 24 and 25 of the patent application illustrating an embodiment of the invention. In that embodiment, the prism 51 has a toric lens 55, shown in more detail in Figure 26, mounted on the emission surface 54 of the prism 51. Thus, the toric lens is part of the lens portion of the prism as defined in amended claim 10.

PRIOR ART REJECTIONS

Examined claims 1-3 and 9 were rejected as anticipated by Caulfield et al (U.S. Patent 3,716,301, hereinafter Caulfield). This rejection is moot because amended claim 1 includes the limitation of examined claim 8.

Claims 4, 5, and 10-12 were rejected as unpatentable over Caulfield in view of Metz et al. (U.S. Patent 5, 974,162, hereinafter Metz). This rejection is respectfully traversed as to the claims now pending.

Claim 10 has been rewritten in independent form and incorporates the limitation of claim 4. Claim 4 has been cancelled. Thus, the rejection is moot as to amended claims 11 and 12 and claim 4. The rejection is responded to only as to amended claim 10.

In the structure shown in Figure 6 of Caulfield, to which the Examiner directed attention, the prism 38 includes distinct surfaces at which the light enters the prism and at which the light exits the prism. The light enters the prism in the same direction, parallel to the detection surface of the prism, as the direction in which the light exits the prism. Thus, Caulfield does not describe the emission light is emitted from the prism in a direction opposite to the direction of the incident light that is incident on the prism as in the apparatus of amended claim 10.

Metz, in the apparatus of its Figures 3 and 4, illustrates structures in which the elements functioning as prisms have a rectangular cross-section. Light is incident from a source on one surface of this prism, is reflected twice internally for incidence on the detection surface on the element where a finger is placed, and reflected a third time to exit the rectangular element. Thus, Metz describes a single surface of the rectangular element as a surface into which light is incident and from which light is emitted. However, neither the incident light nor the emitted light is parallel to the detection surface of the elements 21 and 12 that the Examiner considers to function as prisms.

A fundamental question of obviousness is whether one of skill in the art would find a teaching or suggestion within either of Caulfield or Metz for modifying Caulfield so that the incident light and the emitted light are parallel to the detection surface of the prism and opposite in direction. This question is not, whether, with knowledge of the invention, one of skill in the

art could add appropriate optical elements, such as additional prisms, to the elements found distinctly in Caulfield and Metz to produce the claimed invention. Rather, the issue is whether there is a suggestion for making that modification.

The cited structures in Caulfield and Metz are distinctly different. The prisms are of different shapes. One could not make the proposed modification without adding optical elements not employed in either structure. In other words no suggestion or motivation is found within either of those patents for making the combination made by the Examiner, suggesting that the only basis for the rejection of examined claim 4 and, correspondingly, amended claim 10, is knowledge of the invention. Such knowledge may not be properly relied upon in rejecting the claim. Therefore, upon reconsideration, the rejection should be withdrawn as to amended claim 10 and its dependent claim 5.

Claim 5 provides an additional distinction from the hypothetical modification of Caulfield with Metz. In the pattern reader according to claim 5, the prism includes a reflection surface having a second angle of inclination relative to the detection surface. There is no such reflection surface in Caulfield and the only reflection surfaces in the structures cited in Metz are the detection surface itself or the prism surface parallel to the detection surface. That surface parallel to the detection surface cannot be considered to form a second angle of inclination relative to the deflection surface. Thus, because of this additional difference, claim 5 is clearly patentable over the asserted combination of Caulfield and Metz, regardless of the patentability of amended claim 10.

No separate arguments are presented with regard to the rejection of the claims that depend from amended claim 10, for example claims 13, 14, and 19-24. These rejections fall upon the withdrawal of the rejection of claim 10. Applicants do not waive the right to argue for the patentability of those claims, independently, in subsequent prosecution. Applicants recognize that additional prior art publications were cited in rejecting other claims depending from amended claim 10 and that there is no specific comment concerning each of those publications and rejections. However, if, for the sake of argument, it is assumed that the other references applied in the obviousness rejections do disclose the elements for which they were cited, those references do not disclose the elements of claim 10 that are missing from Caulfield and Metz or that are not suggested in combination by Caulfield and Metz. In other words, the references not discussed cannot establish *prima facie* obviousness of amended claim 10 or as any of its dependent claims that are pending upon entry of the Amendment.

Claim 8 was rejected as obvious over Caulfield in view of Higuchi et al. (U.S. Patent 5,146,102, hereinafter Higuchi). Presumably this rejection might be applied to amended claim 1

since that claim incorporates examined dependent claims 2, 3, and 8. To the extent such a rejection might be made, Applicants traverse the potential rejection.

Amended claim 1 makes clear that the second optical system includes more than one lens and that each lens provides a respective different magnification in "vertical and horizontal" directions, i.e., directions that are transverse to each other. The combination of lenses, as described in examined claim 8, converges the emission light in respective vertical and horizontal directions to form an image on an image pick-up surface of an image pick-up device.

In the rejection, reliance was placed upon Higuchi and its cylindrical lens 15, which appears in different locations of the apparatus shown in Figures 1 and 2 of Higuchi, as describing a second optical system meeting the limitations of claim 8. However, the claim has been misinterpreted. Examined claim 8 made clear that the second optical system included lenses, not a single lens, and that each of those lenses has different magnifications in different, orthogonal, directions from each other. Moreover, the embodiments illustrated in Figures 8 and 9, Figures 10 and 11, and Figures 13 and 14, of the patent application, respective pairs of orthogonal views, make clear that a plurality of lenses is employed in the second optical system of the claimed apparatus. The figures and the description make clear that in the invention of examined claim 8 and amended claim 1 the converging in respective vertical and horizontal directions occurs with respect to individual lenses of the second optical system. Clearly, Higuchi cannot meet the terms of claim 8 nor amended claim 1 because the second optical system of the Higuchi apparatus includes only a single cylindrical lens.

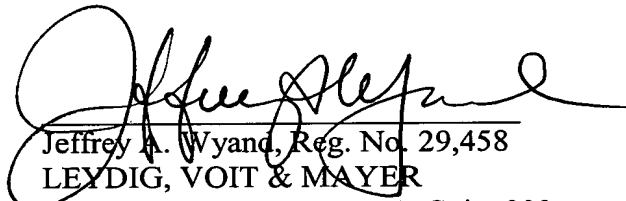
Even assuming that Caulfield can be modified by Higuchi, the combination cannot include all of the limitations of amended claim 1 and, therefore, cannot, in combination with Caulfield, establish *prima facie* obviousness of that claim. For the same reason, the combination cannot establish *prima facie* obviousness as to any of claims 9, 11, and 12, claims that depend from amended claim 1. To the extent that claims 11 and 12, when previously examined as depending from a different claim, were rejected based upon a combination of references including Metz, it is sufficient to point out that Metz lacks a second optical system including a plurality of lenses as described in claim 8 and amended claim 1. Therefore, Metz cannot establish obviousness of any claim, even if added to Higuchi. Accordingly, further comment on those dependent claims is unnecessary.

In re Appln. of OKAMOTO et al.
Application No. 09/621,553

SUMMARY

In this Amendment claims are combined and clarified in response to rejections as to form. Entry of the Amendment is appropriate, even if the rejection is maintained. However, since the claims now pending clearly distinguish from the prior art, upon reconsideration, all claims pending upon entry of this Amendment should be allowed subject only to the double patenting rejection.

Respectfully submitted,


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